400 **DIRECTOR OF FLIGHT PROGRAMS AND PROJECTS**

Responsible for the overall management and implementation of GSFC flight programs and projects including contracts management, technical & business management, mission design, fabrication integration test, qualification, readiness review management, launch operation, and orbital operations. The assignment of is consistent with NPG 7120.5A, entitled "NASA Program and Project Management Processes and Requirements." Responsibilities include small, Earth and Science Programs/Projects like Earth Systems Science Pathfinders (ESSP), Explorers (EXP), and Solar Terrestrial Probes (STP) through large, Earth and Space Science Programs/Projects like Earth Observing Systems (EOS), Hubble Space Telescope (HST), Geostationary Operational Environmental Satellites (GOES) and Polar Operational Environmental Satellites (POES).

The Directorate manages the implementation, maintenance, and operations of end-to-end space operations architectures, including mission operations and tracking and data acquisition services for missions supported by GSFC. Additional responsibilities include the development of the Tracking and Data Relay Satellites (TDRS) and International Projects assigned by NASA Headquarters.

The Directorate assures that a strong and consistent program and project management approach is implemented on all projects including the establishment of overall requirements, design reviews, systems analysis, appropriate pre-launch test programs and science data delivery from operational systems.

DEPUTY DIRECTOR FOR PLANNING & BUSINESS MANAGEMENT

Provides overall management oversight for resources for the Center's on-going satellite launch vehicles projects. Responsible for developing and executing Directorate resources policies, plans, and procedures. Manages the allocation and review of resources, budget, manpower, and space. Provides direction and coordination to assure compatibility of administrative activities through the Directorate. Assures compliance with overall systems that provide current progress and resources data to all levels of management. Evaluates effectiveness of related contractor information systems. Formulates and administers the Directorate budget, ensuring adequate financial support in relation to plans, schedules, and resources requirements. Responsible for Directorate planning activities and implementation of new start activities.

400.1 STAAC BUSINESS MANAGEMENT OFFICE

The STAAC Business Management Office provides the full range of business management to the STAAC Directorate (Code 700); from Level 2 program analysis, formulation, and proposal development of missions, projects, and programs. This is accomplished through business management expertise and streamlined approaches that facilitate the smooth operation of the Directorate and the successful transition of its products for implementation. Specifically, the STAAC Business Management Office provides procurement management and support; budget development, analysis, execution, and traceability of all STAAC resources; proposal development (cost volume), grass roots cost estimates, and pricing; configuration management, scheduling, space management, travel management, institutional and multi-media support.

401 MISSION INTEGRATION OFFICE (MIO)

The MIO initiates and implements special NASA, Goddard and Flight Programs and Projects (FPPD) initiatives, especially involving process improvements, strategic planning implementation, and the conduct of Flight Programs and Projects in accordance with International Standards Organization (ISO)-9001 and NASA policies and guidelines. Performs and implements project and engineering management studies and analyses involving all or multiple Flight Programs. Provides integrated responses and coordinates actions associated with project/engineering management studies and analyses.

402 NASA IPO-REPRESENTATIVE OFFICE

The NASA IPO-Representative serves as one of three members of the Integrated Program Office (IPO) for the National Polar-Orbiting Operational Environmental Satellite System (NPOESS). Management and implementation of the NPOESS program is accomplished by the IPO under a tri-agency Executive Committee (EXCOM) representing Department of Defense (DoD), National Oceanic and Atmospheric Administration (NOAA) and NASA. Through the coordinated use of earth observing satellite resources of each agency, the NPOESS program satisfies the U.S. Government's fundamental civil and national security requirements for collection and distribution of operational polar satellite-based, remotely-sensed meteorological, oceanographic, climatic, and space environmental data.

403 FLIGHT PROGRAMS AND PROJECTS BUSINESS MANAGEMENT OFFICE

Plans and directs the development, implementation, and administration of business management for the Flight Program and Projects Directorate. Provides Center overview of business activities within the Directorate, through which Center-level decisions are executed. Responsible for: implementing program and institutional operating plans; manpower utilization, logistics, determining planning and housing requirements; implementing ADP standards; travel requirements; health and safety issues; small minority business profiles; facilitates the Project Management Development Enterprise (PMDE) Program; and a variety of other functions which ensures operational effectiveness of the Flight Program and Projects Directorate. Provides expert advice and analysis to the Director and his immediate staff, and other project organization managers.

404 INTERNATIONAL PROGRAM OFFICE

The International Program is responsible for the project management for multiple international cooperative endeavors. International Program projects include the following: ASTRO-E is an international cooperative X-ray project between NASA and the Japanese Institute of Space and Astronautical Science (ISAS). The GSFC will provide a number of instruments and supporting equipment. INTERNATIONAL GAMMA-RAY ASTROPHYSICS LABORATORY (INTEGRAL) is an international cooperative project between the European Space Agency (ESA) and NASA. The spacecraft instruments will be provided by ESA and the launch vehicle will be provided by IKI of Russia. The GSFC will provide the active coded-aperture mask and the pulse shape discriminator detector electronics by contract through the University of California San Diego. Deep Space Network support is planned. SATELLITE DE APLICACIONES-C (SAC-C) is a joint mission between NASA and the Argentine Commission on Space Activities (CONAE). NASA will provide a number of science instruments. SAC-C will primarily study terrestrial and marine ecosystems. SPECTRUM-X-GAMMA (SXG) is a collaborative mission between Russia, numerous international partners in Europe and NASA. The mission will carry out two U.S. instruments: a Stellar X-RAY Polarimeter (SXRP) focal plane instrument and a wide field Monitoring X-RAY Experiment (MOXE). X-RAY MULTIMIRROR MISSION (XMM) is another cooperative effort between NASA and the ESA. The XMM is a high throughput X-RAY spectroscopy mission which is the second cornerstone in the ESA long range scientific plan. NASA is providing significant support in two of the three instruments to be flown on the spacecraft. Cluster-II is another cooperative mission between NASA and ESA. This is an in-situ investigation of the Earth's magnetosphere using four identical spacecraft. High Energy Transient Experiment,

HETE-II, is a cooperative mission between NASA and a consortium of partners, including universities, other government agencies, and international institutions. The prime objective is to carry out a multi-wavelength study of gamma-ray bursts with UV, x-ray, and gamma-ray instruments. The International Program is responsible for the overall management of the instruments, spacecraft, and launch vehicles.

410 EXPLORERS (EXP) PROGRAM OFFICE

The EXP program provides the management of scientific exploration efforts involving a long-term series of space flight missions. These include Medium Class Explorer Missions (MIDEX), Small Explorer Mission (SMEX), and University Class Explorers Missions (UNEX). These medium to small size missions are characterized by frequent launches, relatively moderate cost, and the capability of being built, tested, and launched in a short time interval. The objective of the Explorers Program is to conduct space science research in Space Physics and Astrophysics by examination of the Earth's space environment and observing the universe beyond the Earth. The Explorers Program science objectives are encompassed by the objectives of the following NASA space science themes: Astronomical Search for Origins and Planetary Systems; The Sun-Earth Connection; Structure and Evolution of the Universe

415 GEOSTATIONARY OPERATIONAL ENVIRONMENTAL SATELLITE (GOES) PROGRAM OFFICE

The GOES Program provides management and technical expertise for procuring spacecraft (including sensors), unique ground equipment, launch site payload processing, launch vehicle technical surveillance, launch operations, and initial satellite activation and evaluation in orbit for turnover to the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce, for operational use. Under continuing joint agreement between NASA and NOAA, GOES is funded by NOAA to provide an operational geostationary satellite system which will observe the eastern and western United States and the adjacent ocean areas, as well as coverage zones extending well into the southern hemisphere. The GOES spacecraft will also support the communications requirements imposed by the data collection systems and the Search and Rescue Satellite Aided Tracking (SARSAT) system.

420 EARTH OBSERVING SYSTEM GODDARD (EOS-G) PROGRAM OFFICE

The Earth Observing System Goddard (EOS-G) Program Office is the designated program management office for flight, ground, and science performed at GSFC as part of the overall EOS program with the Earth Sciences Enterprise. The ESO-G Program Office is responsible for the management and coordination and support of NASA's

Office of Earth Science (OES) program management. Specific responsibilities include: providing a high-level science and customer interface; supporting the New Business process; supporting Center competition initiatives; supporting mission studies; providing leadership and advice to projects and missions; analyzing and recommending adjustments to budgets within overall ESO-G guidelines; coordinating reporting to Center management and NASA Headquarters; coordinating major internal and external reviews; providing administrative infrastructure support to missions and projects; and coordinating cross-cutting activities and initiatives. The EOS-G Program Office also provides administrative staff support to the OES program management and budgetary processes. The EOS-G Program Office represents GSFC in all matters pertaining to elements within the ESO-G activity.

421 EOS MORNING (AM) PROJECT

The EOS Morning (AM) Project is responsible for management of the EOS AM Observatory. The Project directs all efforts associated with spacecraft development including conceptual design, development, hardware, fabrication and test, instrument integration and test, final verification, mission operations planning and related pre-launch activities. The AM Project is responsible for managing the design and development of scientific instruments to support the science objectives of NASA's Earth Science Enterprise. The instruments will investigate the process which governs and integrates the Earth system which includes the hydrological cycle, the biochemical cycles, climatological and geophysical processes. Investigations include remote sensing instruments and the conduct of interdisciplinary science using data from these instruments.

422 EOS AFTERNOON (PM) PROJECT

The EOS Afternoon (PM) Project is responsible for management of the PM Observatory. The Project will direct all efforts associated with spacecraft development including conceptual design, development, hardware, fabrication and test, instrument integration and test, final verification, mission operations planning and related pre-launch activities. The PM Project is responsible for managing the design and development of scientific instruments to support the science objectives of NASA's Earth Science Enterprise. The instruments will investigate the process which governs and integrates the Earth system which includes the hydrological cycle, the biochemical cycles, climatological and geophysical processes. Investigations include remote sensing instruments and the conduct of interdisciplinary science using data from these instruments.

423 EARTH SCIENCE DATA AND INFORMATION SYSTEM (ESDIS) PROJECT

The ESDIS Project provides project management and technical direction for the design, development, test, and operations of the ground system for the specified Earth Science missions. The ESDIS Project will emphasize science community needs. Responsibility will include management of the development of operations control centers and data processing and analysis facilities that will advance systems technology capability. In addition, the ESDIS Project will provide the system for active archival and distribution of all NASA's Earth Science Data.

424 EOS CHEMISTRY (CHEM) PROJECT

The EOS Chemistry Project manages the Chemistry (CHEM) flight for the Earth Observing Systems in the Earth Science Enterprise. It will direct all efforts associated with spacecraft development from conceptual design to mission operations planning and related pre-launch activities. Similarly, the Project will manage the design and development of scientific instruments in support of NASA's ESE. The flight will focus on the measurement of atmospheric trace gases and their transformations. These gases play a critical role in regulating the Earth's climate. Understanding their distribution will help scientists analyze global climate change issues such as global warming and ozone depletion. The instrument complement planned for CHEM includes the High Resolution Dynamics Limb Sounder (HIRDLS), the Microwave Limb Sounder (MLS), the Tropospheric Emission Spectrometer (ODUS). The HIRDLS is a jointly funded and developed international instrument being undertaken by the United Kingdom and the United States. The MLS and TES are U.S.-developed instruments. The ODUS is an international contribution from Japan. The CHEM is planning to be launched in late 2002 on a medium Launch Vehicle.

425 EOS ICE, CLOUD, AND LAND ELEVATION SATELLITE (ICESat) PROJECT

The ICESat Project manages the mission implementation to include the Geoscience Laser Altimeter System (GLAS) facility instrument development, the spacecraft procurement with Ball Aerospace, the science algorithm and computing facility procurement, the mission integration and test, and the launch and checkout. The purpose of the ICESat mission is to determine the mass balance of the polar ice sheets and their contributions to global sea-level change. In addition, ICESat will measure cloud heights and optical densities, atmospheric aerosols, and land surface and vegetation topographies.

426 SOLAR RADIATION AND CLIMATE EXPERIMENT (SORCE) PROJECT

The SORCE Project conducts mission implementation studies and technical and business planning leading to the development of the SOLSTICE and TSIM missions. As part of the Earth Science Enterprise, SOLSTICE and TSIM will provide knowledge of the solar input to the Earth's climate. These measurements are a continuation of the long-term measurements of the solar forcing function to the Earth's climate.

427 LANDSAT PROJECT

The LANDSAT Project provides project management and technical direction for the development of a spacecraft and for the Enhanced Thematic Mapper Plus (ETM+) instrument. LANDSAT provides periodically refreshed global archive of multi-spectral data that has continuity with data in the existing LANDSAT archive. Planned orbit parameters and an absolute calibration of less than 5 percent will provide the essential data for the global change research community. A panchromatic band has been added to the ETM+.

428 EARTH SCIENCE MISSION OPERATIONS (ESMO) PROJECT

The Earth Science Mission Operations (ESMO) Project is responsible for managing and administering and mission operations and data analysis phases of all Earth Science Enterprise (ESE) satellites. The ESMO Project interfaces with both ESE and the Space Operations Management Office (SOMO). Mission operations and maintaining the safe and productive operations of these spacecraft and their flight systems. All flight and ground software and ground system facilities and spacecraft operations control centers will be maintained by the Project.

440 HUBBLE SPACE TELESCOPE (HST) PROGRAM OFFICE

The Hubble Space Telescope Program is responsible for the Hubble Space Telescope (HST) and other space science, facility-class, astronomical observatories. The objective of the HST Program is to provide mankind with an astronomical capability beyond the reach of all ground-based telescopes and to fulfill as many of the scientific and technological requirements within the lifetime of the observatories' mission. The HST Program provides project management, including mission and science operations, servicing missions, and all associated development activities. Four project offices provide HST and other space science astronomical observatories management and direction.

441 HUBBLE SPACE TELESCOPE (HST) OPERATIONS PROJECT

The HST Operations Project conducts Hubble Space Telescope (HST) operations and the maintenance and operation of the HST ground systems. The HST Operations Project will conduct all HST Observatory science operations, missions operations and the maintenance and operations ground system for at least 20 years. Responsibilities include developing and maintaining ground systems facilities and all flight and ground software; operating the Space Telescope Operations Control Center (STOCC); and safely and productively operating the HST Observatory (scientific instruments); and overseeing the activities of the Space Telescope Science Institute (STScI) operated by the Association of Universities for Research in Astronomy (AURA) for NASA. STScI responsibilities include soliciting observation proposals, allocating telescope time, implementing observations, and creating processed data products.

442 HUBBLE SPACE TELESCOPE (HST) DEVELOPMENT PROJECT

The HST Development Project plans, manages, and directs the HST orbital servicing program. The Projects develops the detailed mission requirements and plans and is responsible for the planning, managing, and directing and HST orbital-servicing program. The Project is responsible for the development of all the HST flight hardware (including replacement scientific instruments and spacecraft black-box orbital replacement units), shuttle space support equipment (including the carriers in the shuttle bay) and the HST-unique astronaut crew aids and tools. The Project is responsible for spacecraft hardware simulators and ground support equipment. The Project is also responsible for all Space Shuttle interfaces with the HST Observatory and shuttle servicing equipment.

442.1 SPACE TRANSPORTATION SYSTEM (STS) LAUNCH CARRIERS (SLC) OFFICE

The STS Launch Carriers Project Office designs, develops, integrates, and tests STS Carrier systems for the launch of flight spacecraft, instruments, and advanced technology demonstrations. This includes the development of unique STS compatible Carrier hardware that provides mission specific electrical and mechanical interfaces, command control & telemetry monitoring, and deployment capabilities. Development efforts are conducted in partnership with industry, academia, and other government organizations for getting small payloads to large spacecraft to orbit, as well as providing a breeding ground for technology spin-offs and commercialization opportunities.

443 NEXT GENERATION SPACE TELESCOPE PROJECT (NGST)

The Next Generation Space Telescope (NGST) Project is advancing the state-of-the-art of large, facility-class space observatories through the advanced technologies and innovative systems engineering architectures. The NGST is a cosmological telescope, designed to unveil the fundamental processes of star & galaxy formation in the universe. To achieve this, the aperture will be 8 meters, in the form of a segmented deployable telescope, and the optical system will be optimized for the near infrared region of the spectrum. Instrumentation will include diffraction-limited cameras and spectrometers. The major NGST partners involved are European Space Agency (ESA) and the Canadian Space Agency (CSA). The Department of Defense is partnering on the technology development, primarily in the mirror and crycooler areas. In addition to key observatory concept technology development, NGST will prepare for 2 technology validation flights—Pathfinders 1 (an inflatable sunshade) and 3 (segmented optics deployment and phasing). Participating Centers include Marshall Space Flight Center (MSFC), Ames Research Center (ARC), Langley Research Center (LRC) and Jet Propulsion Laboratory (JPL).

444 SPACE SCIENCE MISSION OPERATIONS (SSMO) PROJECT

The Space Science and Mission Operations Project is responsible for managing and administering the mission operations and data analysis phases of all satellites assigned to it in the astrophysics and space physics disciplines. Mission operations encompass spacecraft flight operations and science operations and maintaining the safe and productive operations of these spacecraft and their flight systems. All flight and ground software and ground system facilities and spacecraft operations control center will be maintained by the Project. The Project oversees the science programs and activities of the various Principle Investigators and Guest Observers associated with each spacecraft to ensure the proper solicitation of observation and experiment proposals, allocation of spacecraft and science instrument time, implementation of observations and experiments, and the creation of processed data products.

450 MISSION SERVICES (MS) PROGRAM OFFICE

The Mission Services Program Office manages and directs diverse and complex projects. Specifically, the projects are: The Space Network (SN), Ground Network (GN), Mission and Data Systems (MDS), Integrated Financial Management Project (IFMP), Rapid Spacecraft Development Office (RSDO), Tracking and Data Relay Satellite (TDRS) Project, and Orbital Launch Services (OLS) Transition Project Office.

451 SPACE NETWORK (SN) PROJECT

The Space Network Project is responsible for program planning and direction of NASA's near-earth space network tracking and data acquisition facilities and systems. The SN Project manages the definition, design, development, and implementation of evolutionary changes to systems to support continued operation, improved services, and provide new services to customers of the Space Network. The SN Project also develops new customer relationships with other U.S. government and international agencies, our industrial partners, and partners in academia.

452 GROUND NETWORK (GN) PROJECT

The Ground Network Project is responsible for managing the development and operations of NASA's sub-orbital, low, and mid-earth orbiting spacecraft supporting ground systems. These systems provide spacecraft flight projects with tracking, telemetry and command services required to control and maintain spacecraft health and safety, as well as the science data collection interfaces required to achieve mission objectives. The GN Project manages the performance of systems planning, systems engineering, requirements analysis, design, implementation, integration, testing, and sustaining engineering of ground network services, including software, hardware, and security.

453 MISSION AND DATA SYSTEMS (M&DS) PROJECT

The M&DS Project is responsible for providing management of data and mission operations services to in-flight spacecraft missions following mission orbital verification. The M&DS Project is responsible for managing mission operation centers, science data processing, and flight dynamics services and associated facilities management for the conduct of on-orbit operations. The M&DS Project assures spacecraft-to-network compatibility and related simulations certification. The M&DS Project interfaces with space flight projects, subsystem engineers, and investigator personnel concerning spacecraft health and safety, anomaly resolution, and data acquisition, processing, and distribution. The Project manages activities associated with routine generation of orbit and attitude products for on-orbit missions.

454 TRACKING AND DATA RELAY SATELLITE (TDRS) PROJECT

The TDRS Project is responsible for the management of the procurement, design, development, test, launch, on-orbit evaluation and anomaly resolution of TDRS spacecraft. The TDRS spacecraft include the Basic Program (TDRS-1-6), the

Replacement Program (TDRS-7), which replaces the TDRS-B spacecraft destroyed in the Challenger accident and the TDRS Replenishment program (TDRS-H, I, & J).

The TDRS Project consists of in-orbit telecommunications satellites stationed at geosynchronous altitude and associated ground stations located White Sands, New Mexico. This system of satellites and ground stations comprises the TDRS portion of the Space Network that provides mission services for near Earth user satellites and orbiting vehicles. Because the TDRS is a basic agency capability and a national resource, with the Space Shuttle and many near-Earth spacecraft being totally dependent upon it for communications, the Project is especially critical in regards to schedule and performance.

The TDRS Replenishment Program (TDRS H, I, & J) will provide follow-on spacecraft required to maintain and expand the Space Network. The Project is also responsible for implementing modifications to the ground station to accommodate these spacecraft.

455 INTEGRATED FINANCIAL MANAGEMENT PROJECT (IFMP)

The IFMP was established to plan, coordinate, and manage all aspects of the work necessary to acquire and implement a single, integrated financial management system throughout NASA. The principal goal of the IFMP is to improve financial management processes throughout the Agency. The financial management processes that will be supported by the IFM systems include: core financial, budget formulation, time and attendance, procurement, travel, and asset management.

456 RAPID SPACECRAFT DEVELOPMENT OFFICE (RSDO)

The RSDO is responsible for the management and direction of a versatile program directing the definition, competition, and acquisition of multiple Indefinite Delivery Indefinite Quantity (ISIQ) contracts, to offer NASA and other United States' Government agencies extremely fast procurement of spacecraft and payload space for future missions. These missions are characterized by relatively low to moderate cost, small to medium-sized missions that are capable of being built, tested and launched in a short time interval. The services provided by this Office are capable of supporting a wide variety of scientific objectives. Mission success will be delegated to the user, generally either a science Principal Investigator or a NASA flight project. All contracts will use standard industry practices to keep costs at a minimum. The RSDO Spacecraft Acquisition contracts comprise a catalog of existing, previously designed, satellite busses that can be ordered within 30 to 90 days. The Quik Ride program within RSDO is designed to provide payload space, integration and flight service to PI's,

scientists and flight projects seeking to fly payloads of opportunity on existing commercial missions.

457 ORBITAL LAUNCH SERVICES TRANSITION (OLS) PROJECT

The OLS Project is an interim project at GSFC, providing limited orbital launch services for placing payloads into orbit, as well as technical support to organizations regarding launch to orbit. The Kennedy Space Center (KSC) is the lead center for acquisition and management of Expendable Launch Vehicle (ELV) Launch Services. On an interim basis, the OLS Project also maintains a technical skill group to support KSC as the Lead Center. Technical support skills include launch vehicle technologies, mission analysis and mission integration.

460 SOLAR TERRESTRIAL PROBES PROGRAM (STPP) OFFICE

The Solar Terrestrial Probes Program (STPP) is responsible for the management and direction of a dynamic and versatile program consisting of multiple space flight missions related to the Sun Earth Connection Theme for the Office of Space Science. The management of the missions will reflect a new way of doing business consisting of a small cadre of project personnel that will provide program insight and innovative teaming arrangements. The STPP will support the Office of Space Science in the development of Announcements of Opportunity, acquisition strategy, mission concepts and definition and design studies related to the STPP investigations. These continuous sequence of flexible, cost-capped (C/D less than $120 million) missions are a creative blend of in-situ and remote sensing observations, from multiple platforms, addressing focused science objectives.

470 EARTH PROBES-GODDARD (EP-G) PROGRAM OFFICE

The Earth Probes-G Program is responsible for the management and direction of a dynamic and versatile program consisting of multiple Earth system science space flight missions. The Earth System Science Pathfinders Project (ESSP) is characterized by relatively low to moderate cost, small to medium-sized missions that are capable of being built, tested, and launched in a short time interval. The ESSP science investigations are implemented through the Earth Science System Program Office (ESSPO), which provides for the overall program direction and resources of the definition, design, development, and operation of these investigations. In addition, the Program is responsible for TRIANA, TOMS, and AEAP.

471 EARTH SYSTEMS SCIENCE PATHFINDER (ESSP) PROJECT

The ESSP Project is responsible for the management and direction of a dynamic and versatile program consisting of multiple Earth system science space flight missions. These missions are capable of supporting a variety of scientific objectives related to Earth science, including the atmosphere, oceans, land surface, polar ice regions, and solid Earth. Investigations will include development and operation of remote sensing instruments and investigations utilizing data from these instruments. A small cadre of project personnel will provide innovative teaming arrangements and mission success will be placed on the science Principle Investigator and his team, with standard industry procedures and practices encouraged.

472 TOTAL OZONE MAPPING SPECTROMETER (TOMS) PROJECT

The Total Ozone Mapping Spectrometer (TOMS) mission will measure and map ozone in the Earth's stratosphere, study the depletion of ozone in the Earth's polar regions during certain times of the year and perform ozone trend detection. This third and last mission, an instrument will fly on a Russian spacecraft sometime after the year 2000.

473 ATMOSPHERIC EFFECTS OF AVIATION PROJECT (AEAP)

The AEAP Office is a Level II Project Office in support of two Level I Program Offices: the Atmospheric Effects of Stratospheric Aircraft (AESA) and the Subsonic Assessment Program (SASS). The AESA is a study of the potential effects of the operation of a projected future fleet of High Speed supersonic Civil Transport aircraft. The SASS is a study of the potential effects of the present subsonic aircraft fleet and of projected future subsonic flights. The Level II Project Office plans and integrates the activities of all Level III activities conducted at GSFC, other NASA Centers, other organizations, and selected universities.

474 TRIANA PROJECT OFFICE

The TRIANA Project will take advantage of the unique vantage point available at the Sun-Earth L1 point to continuously observe the Earth. The goals of the TRIANA Program are both scientific and educational, including scientific investigations and student participation. TRIANA will include three scientific instruments: the Earth Polychromatic Imaging Camera (EPIC); advanced whole Earth radiometer NISTAR; and a small, next-generation space weather monitoring instrument. TRIANA is expected to be launched by December 2000 from the Space Shuttle cargo bay. Specifically, the instrument's functions are the following: The EPIC instrument will provide visible (red, green, blue), color imaging the full Earth in near real time, with resolution roughly equivalent to that of high definition TV (HDTV). EPIC will observe the Earth's vegetation canopy structure and evolution by taking advantage of the retro-

reflectance, or "hot spot", view that will be available by being in-line between the Earth and Sun. The EPIC will also observe clouds and aerosols; the NISTAR advanced radiometer will provide, by looking at the whole sunlit side of the Earth at once, the first direct measurements of the radiant power reflected by the planet, and thereby contribute to our knowledge of how much of the Sun's energy is absorbed in the Earth's atmosphere; the small, next-generation space weather monitoring instrument will contribute to our understanding of how solar events affect Earth-orbiting spacecraft, such as communication satellites.

480 POLAR OPERATIONAL ENVIRONMENTAL SATELLITES (POES) PROGRAM OFFICE

The objectives of the POES Program are to procure, test, and launch an operational polar orbiting satellite system which will meet the observational requirements as specified by the National Oceanic and Atmospheric Administration (NOAA). NOAA provides all ground segment, spacecraft operations and data reduction support. Polar operational meteorological satellites (polar metsats) provide global coverage of numerous atmospheric and surface parameters. These data are used routinely in numerical weather forecast models. NASA is currently managing the development of a continuing series of contiguous series of measurements for operational weather forecasting. After NASA has completed an on-orbit checkout of the spacecraft, they will be turned over to NOAA for routine operational use. Immediate plans call for the procurement of POES spacecraft and instruments for NOAA-K-N and an additional set of POES instruments to fly on the European METOP satellite.

Also included in the POES Program is the responsibility for management of a NASA-funded Search and Rescue Satellite-aided Tracking (SARSAT) system that involves an international effort to locate ships and aircraft in distress.

490 NEW MILLENNIUM PROGRAM (NMP)

The NMP is responsible for the management of the 1st NMP Earth Observing (EO) Mission and 5th Space Techology (ST) Mission. The Program will direct all efforts associated with spacecraft development including conceptual design, development, hardware fabrication, integration, and test, satellite environmental testing, mission operations development and planning, conduct of the launch campaign, and conduct of mission operations. The management of this program will reflect new ways of doing business consisting of a small cadre of Program/ Project personnel that will provide program insight and innovative teaming arrangements with industry. The responsibility for mission success will be placed on the spacecraft and instrument development teams

along with the science team that compares the imagery with standard industry procedures and practices.

491 NMP EARTH OBSERVING 1 (EO-1) PROJECT

The NMP EO Project is responsible for missions characterized by relatively low-cost, small-sized spacecraft for demonstrating new technology that will be flown in the future at a lower cost than present missions. The NMO EO-1 mission will fly an advanced land imaging detector that is a prototype for post Landsat-7 visible/infrared land imaging instrumentation. Space investigations will compare coordinated Landsat-7 imagery to verify if EO-1 imagery is as good or better than current Landsat imagery.

495 NMP SPACE TECHNOLOGY 5 (ST-5) PROJECT

The NMP ST-5 Project is responsible for the design, manufacture, integration, test, launch, and mission operations of 3 full functioning 20-kilogram class spacecraft. The ST-5 Project has 3 principle goals: 1) design development, integration and test, and operation of a full service 20-kg class spacecraft through the use of multiple new technologies; 2) ability to achieve research quality measurements with this class of spacecraft; and 3) design, development, and operation of multiple spacecraft to act as a single constellation rather than as individual elements. The ST-5 Project spacecraft will provide approximately an order or magnitude reduction in spacecraft mass and power applicable to a wide range of Earth and Space Science missions. ST-5 specifically will mitigate the risk for future nanosat (less than 10 kilograms) constellation missions by validating key enabling technologies.